

Notice of Allowability

Application No.

10/028,787

Examiner

Thoi V. Duong

Applicant(s)

NIIYAMA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the pre-appeal brief filed March 02, 2007.
2. ☒ The allowed claim(s) is/are 1,2,5,6,11-23 and 27-30.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/847,333.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) None
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 3/18/04 & 11/21/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This office action is in response to the Pre-Appeal Brief filed March 02, 2007.
Currently, claims 1, 2, 5, 6, 11-23 and 27-30 are pending in this application.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kirsten A. Grueneberg, Ph. D. (Reg. No. 47,297) on March 26, 2007.

In the specification: in page 13, line 3, delete "Fig. 7 is a schematic perspective view" and insert --Figs. 7(a)-7(d) are schematic perspective views--.

In the claims:

Claim 1: In line 3, after "transparent electrodes;", delete "and".

In line 7, after "liquid crystal layer;", insert --and--.

In line 12, after "transparent electrodes", delete ";" and insert --,--.

In line 13, after "conic state;", insert --and--.

Claim 5: In line 3, after "transparent electrodes;", delete "and".

In line 8, after "liquid crystal layer;", insert --and--.

In line 13, after "transparent electrodes", delete ";" and insert --,--.

In line 14, after "conic state;", insert --and--.

In the title: change the title as "Liquid crystal optical element comprising a resin layer having a surface hardness of B or less."

Allowable Subject Matter

3. Claims 1, 2, 5, 6, 11-23 and 27-30 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claims 1 and 5, none of the prior art of record discloses, in combination with other limitations as claimed, a chiral nematic liquid crystal optical element comprising a second resin layer which is a resin layer selected from the group consisting of a surface layer which has not been subjected to an alignment treatment by rubbing, a vertical alignment layer or a horizontal alignment layer, said second resin layer being provided between the liquid crystal layer and the other of the transparent electrodes,

wherein said liquid crystal layer exhibits a planar state and a focal conic state;
and

wherein the second resin layer has a surface hardness of B or less in a pencil hardness test.

The most relevant references, West et al. (West, US 5,453,863) and Unno et al. (Unno, US 6,233,027 B1), fail to disclose or suggest the claimed invention. West discloses most of limitations of the claims except for a second resin layer having a surface hardness of B or less in a pencil hardness test. Meanwhile, Unno suggests a non-alignment layer as a photoelectric conversion semiconductor layer 22 comprising a

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charge transportation layer 25 formed of resin and containing a solution of a charge transporting substance, wherein this charge transportation layer has a surface hardness of 2B or harder for controlling the cell gap size as shown in Fig. 2 (col. 3, lines 20-28 and 37-48; and col. 6, lines 16-27 and 28-33). However, the charge transportation layer formed of resin has a different function and is not a second resin layer of the claimed invention, which is simply a resin layer selected from the group consisting of a surface layer which has not been subjected to an alignment treatment by rubbing, a vertical alignment layer or a horizontal alignment layer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi V. Duong

03/26/2007

